

# DRAFT

Mr. Pat Gartland  
Atlas Foundry Company, Inc.  
P.O. Box 688  
Marion, IN 46952

Re: 053-11281  
Second Significant Revision to  
FESOP 053-5716-00002

Dear Mr. Gartland:

Atlas Foundry Company, Inc. was issued a Federally Enforceable State Operating Permit (FESOP) on December 9, 1996 for the gray iron foundry. The First Administrative Amendment (No. 053-9496-00002) was issued on April 29, 1998, the First Minor Permit Revision (No. 053-10365-00002) was issued on February 10, 1999, and the First Significant Permit Revision (No. 053-10956-00002) was issued on September 7, 1999. A letter requesting additional changes to the FESOP was received on August 23, 1999. Pursuant to the provisions of 326 IAC 2-8-11.1 a significant permit revision to the FESOP is hereby approved as described in the attached Technical Support Document.

On August 23, 1999, Atlas Foundry Company, Inc. submitted an application to the OAM requesting to construct and operate one (1) new shotblast machine at their existing plant. The new Atlas Foundry Company, Inc. is adding the following equipment units and control devices:

one (1) new mesh belt shotblast machine, with a maximum capacity of 5.0 tons per hour of iron castings and 1.25 tons per hour of steel shot, controlled by existing baghouse D.

The following construction conditions are applicable to the proposed project:

1. General Construction Conditions

The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Management (OAM).

2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

3. Effective Date of the Permit

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Nisha Sizemore, OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, at 317-232-8356 or in Indiana at 1-800-451-6027 (ext 2-8356).

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Management

Attachments

nls

cc: File - Grant County  
U.S. EPA, Region V  
Grant County Health Department  
Air Compliance Section Inspector - Richard Sekula  
Compliance Data Section - Karen Nowak  
Administrative and Development - Janet Mobley  
Technical Support and Modeling - Michele Boner

**FEDERALLY ENFORCEABLE STATE  
OPERATING PERMIT (FESOP)  
OFFICE OF AIR MANAGEMENT**

**Atlas Foundry Company, Inc.  
Factory & Henderson Avenues  
Marion, Indiana 46952**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the facilities listed in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 and contains the conditions and provisions specified in 326 IAC 2-8 and 40 CFR Part 70.6 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments) and IC 13-15 and IC 13-17 (prior to July 1, 1996, IC 13-1-1-4 and IC 13-7-10).

Operation Permit No.: F053-5716-00002	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date: December 9, 1996

First Administrative Amendment No. AAF 053-9496-00002, issued on April 29, 1998  
First Minor Permit Modification No. MMF 053-10365-00002, issued on February 10, 1999  
First Significant Revision No.: 053-10956-00002, issued on September 7, 1999  
Second Significant Revision No.: 053-11281-00002, issued on ???, 1999

Third Significant Revision No.: 053-11473-00002	Pages affected: 4, 5, 29, 30, 31, and 40
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

Atlas Foundry Company, Inc.  
Marion, Indiana

Permit Reviewer: Nisha Sizemore

Second Significant Revision No. 053-5716-00002  
Permit Reviewer: MES

Page 2 of 40  
FESOP No. F053-5716-00002

## SECTION A

## SOURCE SUMMARY

### A.1 General Information

The Permittee owns and operates a gray iron foundry.

Responsible Official: Atlas Foundry Company, Inc.  
Source Address: Factory & Henderson Avenues, Marion, Indiana 46952  
Mailing Address: P.O. Box 668, Marion, Indiana 46952  
SIC Code: 3321  
County Location: Grant  
County Status: Attainment for all criteria pollutants  
Source Status: Synthetic Minor Source, FESOP Program

### A.2 Emission Units and Pollution Control Summary

The stationary source consists of the following emission units and pollution control devices:

- (a) two (2) electric induction furnaces, each with a maximum capacity of 4.4 tons of iron per hour, controlled by a baghouse, referred to as baghouse E;
- (b) one (1) charge handling system for the furnaces, with a maximum capacity of 8.8 tons of iron per hour, controlled by a baghouse, referred to as baghouse E.
- (c) one (1) isocure core-making line, consisting of two (2) isocure core machines and one (1) isocure sand mixer, with a maximum capacity of 0.75 tons of cores per hour;
- (d) one (1) Disa pouring/casting line, with a maximum capacity of 10 tons of iron per hour, controlled by baghouse D;
- (e) one (1) Disa castings cooling process, with a maximum capacity of 10 tons of iron per hour, controlled by baghouse D;
- (f) one (1) Aisco Drum (shakeout) operation, with a maximum capacity of 10 tons of iron per hour, controlled by wet scrubber C;
- (g) two (2) shotblast operations, referred to as the Peru shotblast and the Atlas shotblast, each with a maximum capacity of 5 tons of iron per hour, controlled by baghouse B;
- (h) nine (9) shell core machines and shell handling with a maximum capacity of 1.0 tons of cores per hour;
- (i) one (1) Disa sand handling process, with a maximum capacity of 60 tons of sand per hour, controlled by baghouse D;
- (j) one (1) 16 x 20 manual pouring/casting line, with a maximum capacity of 4.0 tons of iron per hour, uncontrolled;
- (k) one (1) 16 x 20 manual castings cooling line, with a maximum capacity of 4.0 tons of iron per hour, uncontrolled.

- (l) one (1) 16 x 20 manual sand handling line, with a maximum capacity of 20 tons of sand per hour, controlled by baghouse D;
- (m) three (3) stand grinders, each with a maximum capacity of 3.33 tons per hour, controlled by a baghouse, referred to as baghouse A;
- (n) One (1) rotary media drum for the shakeout of gray iron castings, exhausting to baghouse D, capacity: 14 tons of metal and 20 tons of sand per hour; and
- (o) one (1) new mesh belt shotblast machine, with a maximum capacity of 5.0 tons per hour of iron castings and 1.25 tons per hour of steel shot, controlled by existing baghouse D.

A.3 Insignificant Activities

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(20):

- (1) natural gas-fired combustion sources;
- (2) storage tanks with capacities less than 1000 gallons;
- (3) vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;
- (4) brazing equipment, cutting torches, soldering equipment, welding equipment;
- (5) replacement or repair of electrostatic precipitators, bags in baghouses and filter in other air filtration equipment;
- (6) paved and unpaved roads and parking lots with public access;
- (7) gasoline generators not exceeding 110 horsepower;
- (8) grinding and machining operations;
- (9) mold release agents using low volatile products;
- (10) one (1) isocure sand mixer, one (1) core oil sand muller, one (1) core oil oven, and shell sand handling.

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) for a Federally Enforceable State Operating Permit (FESOP).

## SECTION D.4 FACILITY OPERATION CONDITIONS

Disa pouring/casting, castings cooling, and sand handling operations, with maximum capacities of 10 tons of iron per hour and 60 tons of sand per hour, controlled by baghouse D. The manual pouring/casting, castings cooling, uncontrolled. The manual sand handling, with a maximum capacity of 4.0 tons of iron per hour and 20 tons of sand per hour, controlled by baghouse D. One (1) rotary media drum for the shakeout of gray iron castings, exhausting to baghouse D, capacity: 14 tons of metal and 20 tons of sand per hour. one (1) new mesh belt shotblast machine, with a maximum capacity of 5.0 tons per hour of iron castings and 1.25 tons per hour of steel shot, controlled by existing baghouse D.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### Emissions Limitations and Standards [326 IAC 2-8-4(1)] [326 IAC 6-3]

#### D.4.1 Particulate Matter [326 IAC 6-3-2] [326 IAC 2-2]

That pursuant to 326 IAC 6-3 (Process Operations), the baghouse shall be in operation at all times that the manual or Disa sand handling, Disa pouring/casting, Disa castings cooling, the mesh belt shotblast machine, or rotary media drum is in operation. The particulate matter emissions shall meet the following:

- (a) The particulate matter emissions from the one (1) rotary media drum for the shakeout of gray iron castings shall not exceed 0.832 pounds per hour.
- (b) The particulate matter emissions from the sand handling process (including all sand handling) shall not exceed 6.95 pounds per hour.
- (c) The particulate matter emissions from the manual pouring/casting process shall not exceed 11.25 pounds per hour.
- (d) The particulate matter emissions from the castings cooling process (total for both Disa and manual) shall not exceed 6.94 pounds per hour.
- (e) The particulate matter emissions from the mesh belt shotblast machine shall not exceed 5.48 pounds per hour.
- (f) The particulate matter emissions from baghouse D shall not exceed 31.5 pounds per hour.

Compliance with these limits will result in compliance with 326 IAC 6-3-2, Process Operations, and make the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, not applicable.

#### D.4.2 Particulate Matter less than 10 Microns

Pursuant to 326 IAC 2-8 (FESOP) and 326 IAC 2-2 (Prevention of Significant Deterioration), the following conditions shall apply:

- (a) The metal throughput to the manual 16 x 20 line shall not exceed 500 tons per month.
- (b) The baghouse controlling the Disa pouring/casting, Disa castings cooling, Disa sand handling operations, rotary media drum shakeout process, and the manual sand handling process shall operate at all times that the any of these processes is in operation.

- (c) The PM<sub>10</sub> emissions from the baghouse D shall not exceed 9.62 pounds per hour.

These limits are necessary to limit the total source wide PM<sub>10</sub> emissions to 8.25 tons per month. Compliance with this condition will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) 326 IAC 2-7 (Part 70 Permits), not applicable.

### **Testing Requirements [326 IAC 2-8-4(3)]**

#### **D.4.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)]**

Between January 1999 and June 1999, the Permittee shall perform PM and PM<sub>10</sub> testing for baghouse D, which controls the Disa pouring/casting, Disa cooling, Disa sand handling, rotary media drum shakeout process, the mesh belt shotblast machine, and the manual sand handling process, utilizing methods per 40 CFR Part 60 Appendix A, Method 5, 17, 40 CFR Part 51 Appendix M, Method 201, 201a, 202, as approved by the Commissioner. This test shall be repeated no less than once every 5 years from the date of this valid compliance demonstration. PM<sub>10</sub> includes filterable and condensable PM<sub>10</sub>. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

### **Compliance Monitoring Requirements [326 IAC 2-8-5(a)(1)]**

#### **D.4.4 Pressure Readings**

The Permittee shall take readings of the total static pressure drop across baghouse D controlling the Disa pouring/casting, Disa cooling, Disa sand handling, manual sand handling, pouring/casting, castings cooling, the mesh belt shotblast machine, and rotary media drum shakeout operations, at least once per shift when these processes are in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained with the range of 3 to 9.5 inches of water determined during the most recent stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of this range for any one reading.

The instrument used for determining the pressure shall comply with condition C.10 Pressure Gauge Specifications, be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

#### **D.4.5 Visible Emission Observations**

Visible emissions notations of the baghouse D stack exhaust shall be performed at least once per shift when the Disa pouring, Disa cooling, Disa sand handling, manual sand handling, pouring/casting, castings cooling, the mesh belt shotblast machine, and rotary media drum shakeout operations are in operation. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, 80% of the time the process is in operation, not counting startup or shutdown time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.



**D.4.6 Broken or Failed Bag Detection**

In the event that bag failure has been observed.

- (a) The affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

**D.4.7 Preventive Maintenance**

A Preventive Maintenance Plan, in accordance with condition B.13 of this permit, is required for these facilities and any control device.

**Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

**D.4.8 Operational Parameters**

That the Permittee shall maintain records at the stationary source of the following values:

- (a) daily inlet and outlet differential static pressure;
- (b) visible observations once per shift.

**D.4.9 Record Keeping**

That the Permittee shall maintain records of baghouse preventative maintenance, parametric monitoring data, visible emissions observations, and all corrective actions taken and the outcome from each. These records shall be made available upon request of the Office of Air Management (OAM) staff.

**D.4.10 Quarterly Reporting**

That a quarterly summary to document compliance with operation condition number D.4.2 shall be submitted to the address listed in Section C - General Reporting Requirements, using the enclosed forms or their equivalent, within thirty (30) days after the end of the quarter being reported.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
COMPLIANCE DATA SECTION**

**FESOP Quarterly Report**

Source Name: Atlas Foundry Company, Inc.  
Source Address: Factory & Henderson Avenues, Marion, Indiana 46952  
FESOP No.: 053-5716-00002  
Facility: manual pouring/casting process (16 x 20 line)  
Parameter: metal throughput  
Limit: 500 tons per month

**Year:** \_\_\_\_\_

Month	Material throughput (tons/month)

- 9 No deviation occurred in this quarter.
- 9 Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title/Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

# **Indiana Department of Environmental Management Office of Air Management**

Addendum to the  
Technical Support Document for Federally Enforceable State Operating Permit (FESOP)

**Atlas Foundry Company, Inc.  
Factory & Henderson Avenues  
Marion, Indiana 46952**

**F-053-11281, Plt ID-053-00002**

On September 24, 1999, the Office of Air Management (OAM) had a notice published in the Marion Chronicle Tribune, Marion, Indiana, stating that Atlas Foundry Company had applied for a revision to the Federally Enforceable State Operating Permit (FESOP). The notice also stated that OAM proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAM believes that a significant or minor permit revision is not required for this modification. The proposed modification consists of a new mold line (including pouring/casting, castings cooling, and shakeout), a new shotblast machine, and three (3) new stand grinders. The new mold line will be controlled by existing baghouse D. The stand grinders and the new shotblast machine will be controlled by a new baghouse, identified as baghouse E. The source already has one molding line which is also controlled by the baghouse D. The potential to emit from baghouse D will not increase. Therefore, the installation of the new mold line and the new shotblast machine requires only an administrative amendment because it is a modification which adds an emission unit of the same type as those already permitted and operating at the source. The new mold line and the new shotblast machine will comply with the same applicable requirements and permit terms and conditions as the existing mold line, shotblast machines, and stand grinders. The compliance monitoring requirements relating to baghouse D will not be affected by this modification. The compliance monitoring requirements for the new baghouse E will be the same as the compliance monitoring requirements for existing baghouse D. The potential to emit PM<sub>10</sub> from the entire source will not increase as a result of this modification because the source has elected to keep their FESOP. The PM<sub>10</sub> limits in the existing FESOP are sufficient to act as an emission cap for the source. The increase in the potential to emit PM due to this modification will be less than 25 tons per year (or 5 tons per year for AA). Therefore, this modification is subject to the requirements of 326 IAC 2-8-11.1 (Minor Revisions) or 326 IAC 2-8-10 (Administrative Amendments).

On September 27, 1999, Atlas Foundry submitted comments on the proposed FESOP revisions. The summary of the comments is as follows:

## **Comment**

- (a) On page 4 of the Technical Support Document (TSD), the existing FESOP limits used to calculate the potential to emit (PTE) appear to have been taken from the FESOP's original TSD instead of the one used to calculate the FESOP's first significant revision (permit no. 053-10956-00002). I have enclosed a copy of that TSD for you. Please change the PTE emissions accordingly.

- (b) On page 8 of the TSD, several pieces of core making equipment are shown to be removed from the FESOP. However, the emissions from this equipment (especially VOCs) were unaccounted for when calculating the PTE emissions. Please verify that these emissions are included in the PTE calculations.
- (c) In the original permit application, it was stated that the maximum restricted production for the manual 16 x 20 line would be reduced from 14,000 tons per year (TPY) to 6,000 TPY. This reduction in production and emissions was not included in the revision. Please adjust the draft permit revision accordingly.

#### Response

The OAM agrees with all three of the comments. The permit now includes a production limit of 6000 tons per year for the manual 16 x 20 line. The PTE emissions shown in Appendix A of the TSD now accounts for the production limit, the FESOP's first significant revision, and the core making equipment that was removed.

#### D.4.1 Particulate Matter [326 IAC 6-3-2] [326 IAC 2-2]

That pursuant to 326 IAC 6-3 (Process Operations), the baghouse shall be in operation at all times that the manual or Disa sand handling, Disa pouring/casting, Disa castings cooling, the mesh belt shotblast machine, or rotary media drum is in operation. The particulate matter emissions shall meet the following:

- (a) The particulate matter emissions from the one (1) rotary media drum for the shakeout of gray iron castings shall not exceed 0.832 pounds per hour.
- (b) The particulate matter emissions from the sand handling process (including all sand handling) shall not exceed 6.95 pounds per hour.
- (c) The particulate matter emissions from the manual pouring/casting process shall not exceed 11.25 pounds per hour.
- (d) The particulate matter emissions from the castings cooling process (total for both Disa and manual) shall not exceed 6.94 pounds per hour.
- (e) The particulate matter emissions from the mesh belt shotblast machine shall not exceed 5.48 pounds per hour.
- (f) The particulate matter emissions from the baghouse D shall not exceed 31.5 pounds per hour.**

Compliance with these limits will result in compliance with 326 IAC 6-3-2, Process Operations, and make the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, not applicable.

#### D.4.2 Particulate Matter less than 10 Microns

Pursuant to 326 IAC 2-8 (FESOP) and 326 IAC 2-2 (Prevention of Significant Deterioration), the following conditions shall apply:

- (a) The metal throughput to the manual 16 x 20 line shall not exceed ~~4463~~ **500** tons per month.

- (b) The baghouse controlling the Disa pouring/casting, Disa castings cooling, Disa sand handling operations, rotary media drum shakeout process, and the manual sand handling process shall operate at all times that any of these processes is in operation.
- (c) The PM10 emissions from the baghouse D shall not exceed ~~14.2~~ **9.62** pounds per hour.

These limits are necessary to limit the total source wide PM10 emissions to 8.25 tons per month. Compliance with this condition will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) 326 IAC 2-7 (Part 70 Permits), not applicable.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
COMPLIANCE DATA SECTION**

**FESOP Quarterly Report**

Source Name: Atlas Foundry Company, Inc.  
Source Address: Factory & Henderson Avenues, Marion, Indiana 46952  
FESOP No.: 053-5716-00002  
Facility: manual pouring/casting process (16 x 20 line)  
Parameter: metal throughput  
Limit: 4463 **500** tons per month

**Year:** \_\_\_\_\_

Month	Material throughput (tons/month)

- 9 No deviation occurred in this quarter.
- 9 Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title/Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **Indiana Department of Environmental Management Office of Air Management**

### **Technical Support Document (TSD) for a Significant Permit Revision to a Federally Enforceable State Operating Permit**

#### **Source Background and Description**

<b>Source Name:</b>	<b>Atlas Foundry Company, Inc.</b>
<b>Source Location:</b>	<b>Factory and Henderson Avenues, Marion, Indiana 46952</b>
<b>County:</b>	<b>Grant</b>
<b>SIC Code:</b>	<b>3321</b>
<b>Operation Permit No.:</b>	<b>F 053-5716-00002</b>
<b>Operation Permit Issuance Date:</b>	<b>December 9, 1996</b>
<b>Permit Revision No.:</b>	<b>053-11281-00002</b>
<b>Permit Reviewer:</b>	<b>Nisha Sizemore</b>

The Office of Air Management (OAM) has reviewed a revision application from Atlas Foundry Company, Inc. relating to the operation of one (1) new mesh belt shotblast machine, with a maximum capacity of 5.0 tons per hour of iron castings and 1.25 tons per hour of steel shot, controlled by existing baghouse D. Atlas has also removed and discarded the equipment involved with the oil core making process. All of the core production originally produced through the oil coremaking equipment has been moved to either an Isocure core making line or one of several shell core machines, all of which are existing, previously permitted equipment.

#### **History**

On August 23, 1999, Atlas Foundry Company, Inc. submitted an application to the OAM requesting to construct and operate one (1) new mesh belt shotblast machine at their existing plant. Atlas Foundry Company was issued a Federally Enforceable State Operating Permit (FESOP) on December 9, 1996. The first Administrative Amendment (No. AAF 053-9496-00002) was issued on April 29, 1998. The first Minor Permit Revision to the FESOP was issued on February 10, 1999. The first Significant Permit Revision to the FESOP was issued on September 7, 1999. Atlas Foundry Company is adding the following emission units:

one (1) new mesh belt shotblast machine, with a maximum capacity of 5.0 tons per hour of iron castings and 1.25 tons per hour of steel shot, controlled by existing baghouse D.

#### **Existing Approvals**

The source was issued a FESOP F 053-5716-00002 on December 9, 1996. The source has since received the following:

- (a) First Administrative Amendment No. AAF 053-9496-00002, issued on April 29, 1998;
- (b) First Minor Permit Revision No. MMF 053-10365-00002, issued on February 10, 1999; and
- (c) First Significant Permit Revision No. 053-10956, issued on September 7, 1999.

### Enforcement Issue

There are no enforcement actions pending.

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
D	mesh belt shotblast machine	20	5.0	70,000	68.0

### Recommendation

The staff recommends to the Commissioner that the Significant Permit Revision be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application received on August 23, 1999.

### Emission Calculations

See Appendix A of this document for detailed emissions calculations.

### Potential To Emit before Controls (Modification - new mesh belt shotblast machine, only)

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

Pollutant	Potential To Emit (tons/year)
PM	372
PM <sub>10</sub>	37.2
SO <sub>2</sub>	0.0
VOC	0.0
CO	0.0
NO <sub>x</sub>	0.0

Note: For the purpose of determining Title V applicability for particulates, PM<sub>10</sub>, not PM, is the regulated pollutant in consideration.



HAPs	Potential To Emit (tons/year)
Chromium	less than 10
Cobalt	less than 10
Nickel	less than 10
Arsenic	less than 10
Cadmium	less than 10
Selenium	less than 10
Lead	less than 10
TOTAL	less than 25

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and PM<sub>10</sub> are equal to or greater than 25 tons per year. Therefore, FESOP is being modified through a Significant Permit Revision. This revision is being performed pursuant to 326 IAC 2-8-11.1(f)(1)(E), any modification with a potential to emit greater than or equal to twenty-five (25) tons per year of particulate matter (PM) or particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM<sub>10</sub>) and is not an administrative amendment under 326 IAC 2-8-10 or subject to 326 IAC 2-8-11.1(d) will be processed in accordance with 326 IAC 2-8-11.1(f).

#### Source Status

Existing Source FESOP Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Limited Emissions (tons/year)
PM	196
PM <sub>10</sub>	99.0
SO <sub>2</sub>	0.78
VOC	36.3
CO	0.00
NOx	0.38

- (a) This existing source is a major stationary source because it is one of the 28 listed source categories and at least one attainment regulated pollutant is emitted at a rate of 100 tons per year. This source has never been reviewed pursuant to the requirements of 326 IAC 2-2 (PSD).
- (b) These emissions are based upon the Technical Support Document (TSD) to the FESOP No. F053-5716-00002, issued on December 9, 1996.

### Potential to Emit After Controls

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units for the modification.

	Potential to Emit (tons/year)						
Process/facility	PM	PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
mesh belt shotblast machine	24.0	0.89	0.00	0.00	0.00	0.00	0.52
Existing FESOP limits	172	98.11	0.78	36.3	0.00	0.38	19.1
Total Emissions	196	99.0	0.78	36.3	0.00	0.38	19.62

- (a) This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2 and 40 CFR 52.21, the PSD requirements do not apply.
- (b) The limited PM<sub>10</sub> emissions and the limited HAP emissions will remain less than one hundred (100) tons per year and twenty-five (25) tons per year, respectively. Therefore, the source will continue to comply with the requirements of 326 IAC 2-8, FESOP.
- (c) The existing FESOP limits are taken from the Technical Support Document (TSD) to F053-5716-00002, issued on December 9, 1996.

### County Attainment Status

The source is located in Grant County.

Pollutant	Status
PM <sub>10</sub>	attainment
SO <sub>2</sub>	attainment
NO <sub>2</sub>	attainment
Ozone	attainment
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. Grant County has been designated as attainment or unclassifiable for ozone.

### Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 326 IAC 20; 40 CFR Part 60 and 40 CFR Part 61) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

### **State Rule Applicability - Entire Source**

There are no changes in State rule applicability for the entire source from the original FESOP.

### **State Rule Applicability - Individual Facilities**

#### **326 IAC 6-3-2 (Process Operations)**

Pursuant to 326 IAC 6-3-2, Process Operations, the particulate matter (PM) from the one (1) mesh belt shotblast machine shall be limited to 12.1 pounds per hour when operating at a process weight rate of 5 tons per hour. The pounds per hour limitation was calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

Based on calculations made, the shotblast machine is in compliance with this requirement. The baghouse D shall be in operation at all times the shotblast machine is in operation, in order to comply with this limit.

#### **326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-8 (FESOP)**

In order to render the requirements of 326 IAC 2-2 (PSD) and 40 CFR 52.21 not applicable and in order for the source to maintain FESOP status, the following conditions shall apply:

- (1) The particulate matter (PM) emissions from the shotblast machine shall not exceed 5.48 pounds per hour.
- (2) The PM10 emissions from the shotblast machine shall not exceed 0.20 pounds per hour.
- (3) The baghouse shall be in operation at all times the shotblast machine is in operation.

Therefore, the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 40 CFR 52.21 will not apply.

### **Compliance Requirements**

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with

applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

The one (1) mesh belt shotblast machine has applicable compliance monitoring conditions as specified below:

- (a) Visible emissions notations of the one (1) mesh belt shotblast machine shall be performed once per shift during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.
- (b) The Permittee shall record the total static pressure drop across the baghouse (D) controlling the one (1) shotblast machine, at least once per day when the one (1) shotblast machine is in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 3 to 9.5 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.
- (c) An inspection shall be performed each calendar quarter of all bags controlling the cooling and shakeout processes when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting indoors. All defective bags shall be replaced.
- (d) In the event that bag failure has been observed.
  - (1) The affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure,

response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

- (2) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

These monitoring conditions are necessary because the baghouse must operate properly to ensure compliance with 326 IAC 6-3 (Process Operations) and 326 IAC 2-8 (FESOP) and render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

## **Air Toxic Emissions**

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Part 70 Application Form GSD-08.

- (a) This source is limited in the existing FESOP to emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.
- (b) See attached calculations for detailed air toxic calculations.

## **Proposed Changes**

### **A.2 Emission Units and Pollution Control Summary**

The stationary source consists of the following emission units and pollution control devices:

- (a) two (2) electric induction furnaces, each with a maximum capacity of 4.4 tons of iron per hour, controlled by a baghouse, referred to as baghouse E;
- (b) one (1) charge handling system for the furnaces, with a maximum capacity of 8.8 tons of iron per hour, controlled by a baghouse, referred to as baghouse E.
- (c) one (1) Isocure core-making line, consisting of two (2) Isocure core machines and one (1) Isocure sand mixer, with a maximum capacity of 0.75 tons of cores per hour;
- (d) one (1) Disa pouring/casting line, with a maximum capacity of 10 tons of iron per hour, controlled by baghouse D;
- (e) one (1) Disa castings cooling process, with a maximum capacity of 10 tons of iron per hour, controlled by baghouse D;

- (f) one (1) Aisco Drum (shakeout) operation, with a maximum capacity of 10 tons of iron per hour, controlled by wet scrubber C;
- (g) two (2) shotblast operations, referred to as the Peru shotblast and the Atlas shotblast, each with a maximum capacity of 5 tons of iron per hour, controlled by baghouse B;
- (h) nine (9) shell core machines and shell handling with a maximum capacity of 1.0 tons of cores per hour;
- (i) one (1) Disa sand handling process, with a maximum capacity of 60 tons of sand per hour, controlled by baghouse D;
- (j) one (1) 16 x 20 manual pouring/casting line, with a maximum capacity of 4.0 tons of iron per hour, uncontrolled;
- (k) one (1) 16 x 20 manual castings cooling line, with a maximum capacity of 4.0 tons of iron per hour, uncontrolled.
- (l) one (1) 16 x 20 manual sand handling line, with a maximum capacity of 20 tons of sand per hour, controlled by baghouse D;
- (m) three (3) stand grinders, each with a maximum capacity of 3.33 tons per hour, controlled by a baghouse, referred to as baghouse A.
- ~~(n) one (1) oil core making process consisting of one (1) core oil oven and one (1) core oil sand muller with a maximum capacity of 0.2 tons of cores per hour;~~
- ~~(n)~~ One (1) rotary media drum for the shakeout of gray iron castings, exhausting to baghouse D, capacity: 14 tons of metal and 20 tons of sand per hour; **and**
- (o) one (1) new mesh belt shotblast machine, with a maximum capacity of 5.0 tons per hour of iron castings and 1.25 tons per hour of steel shot, controlled by existing baghouse D.**

The facility description in the box in Section D.4 has been revised as follows:

Disa pouring/casting, castings cooling, and sand handling operations, with maximum capacities of 10 tons of iron per hour and 60 tons of sand per hour, controlled by baghouse D. The manual pouring/casting, castings cooling, uncontrolled. The manual sand handling, with a maximum capacity of 4.0 tons of iron per hour and 20 tons of sand per hour, controlled by baghouse D. One (1) rotary media drum for the shakeout of gray iron castings, exhausting to baghouse D, capacity: 14 tons of metal and 20 tons of sand per hour. **One (1) new mesh belt shotblast machine, with a maximum capacity of 5.0 tons per hour of iron castings and 1.25 tons per hour of steel shot, controlled by existing baghouse D.**

**(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)**

D.4.1 Particulate Matter [326 IAC 6-3-2] [326 IAC 2-2]

That pursuant to 326 IAC 6-3 (Process Operations), the baghouse shall be in operation at all times that the manual or Disa sand handling, Disa pouring/casting, Disa castings cooling, **the mesh belt shotblast machine**, or rotary media drum is in operation. The particulate matter emissions shall meet the following:

- (a) The particulate matter emissions from the one (1) rotary media drum for the shakeout of gray iron castings shall not exceed 0.832 pounds per hour.
- (b) The particulate matter emissions from the sand handling process (including all sand handling) shall not exceed 6.95 pounds per hour.
- (c) The particulate matter emissions from the manual pouring/casting process shall not exceed 11.25 pounds per hour.
- (d) The particulate matter emissions from the castings cooling process (total for both Disa and manual) shall not exceed 6.94 pounds per hour.
- (e) **The particulate matter emissions from the mesh belt shotblast machine shall not exceed 5.48 pounds per hour.**

Compliance with these limits will result in compliance with 326 IAC 6-3-2, Process Operations, and make the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, not applicable.

D.4.2 Particulate Matter less than 10 Microns

Pursuant to 326 IAC 2-8 (FESOP) and 326 IAC 2-2 (Prevention of Significant Deterioration), the following conditions shall apply:

- (a) The metal throughput to the manual 16 x 20 line shall not exceed 1,163 tons per month.
- (b) The baghouse controlling the Disa pouring/casting, Disa castings cooling, Disa sand handling operations, rotary media drum shakeout process, and the manual sand handling process shall operate at all times that the any of these processes is in operation.
- (c) The PM<sub>10</sub> emissions from the baghouse D shall not exceed ~~14.2~~ **9.62** pounds per hour.

These limits are necessary to limit the total source wide PM<sub>10</sub> emissions to 8.25 tons per month. Compliance with this condition will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) 326 IAC 2-7 (Part 70 Permits), not applicable.

D.4.3 Testing Requirements [326 IAC 2-8-5(a)(1), (4)]

Between January 1999 and June 1999, the Permittee shall perform PM and PM<sub>10</sub> testing for baghouse D, which controls the Disa pouring/casting, Disa cooling, Disa sand handling, rotary media drum shakeout process, **the mesh belt shotblast machine**, and the manual sand handling process, utilizing methods per 40 CFR Part 60 Appendix A, Method 5, 17, 40 CFR Part 51 Appendix M, Method 201, 201a, 202, as approved by the Commissioner. This test shall be repeated no less than once every 5 years from the date of this valid compliance demonstration. PM<sub>10</sub> includes filterable and condensable PM10. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

**D.4.4 Pressure Readings**

The Permittee shall take readings of the total static pressure drop across baghouse D controlling the Disa pouring/casting, Disa cooling, Disa sand handling, manual sand handling, pouring/casting, castings cooling, **the mesh belt shotblast machine**, and rotary media drum shakeout operations, at least once per shift when these processes are in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained with the range of 3 to 9.5 inches of water determined during the most recent stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of this range for any one reading.

The instrument used for determining the pressure shall comply with condition C.10 Pressure Gauge Specifications, be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

**D.4.5 Visible Emission Observations**

Visible emissions notations of the baghouse D stack exhaust shall be performed at least once per shift when the Disa pouring, Disa cooling, Disa sand handling, manual sand handling, pouring/casting, castings cooling, **the mesh belt shotblast machine**, and rotary media drum shakeout operations are in operation. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, 80% of the time the process is in operation, not counting startup or shutdown time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

**Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

**D.4.8 Operational Parameters**

That the Permittee shall maintain ~~daily~~ records at the stationary source of the following values:

- (a) **daily** inlet and outlet differential static pressure;
- (b) visible observations **once per shift**.

**Conclusion**

The operation of this one (1) mesh belt shotblast machine shall be subject to the conditions of the attached proposed Significant Revision to a FESOP No. 053-11281-00002 and FESOP No. F 053-15716-00002.



Limited emissions  
manual line

# Appendix A: Emission Calculations

Company Name: Atlas Foundry Company, Inc.  
Plant Location: Factory & Henderson Avenues, Marion, Indiana  
County: Grant  
Date Received: June 10, 1996  
Permit Reviewer: Nisha Sizemore  
CP #: 053-5716  
Plt. ID #: 053-00002

## \*\* Process Emissions \*\*

Process:	Rate (tons Al/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control (% eff.)
Pouring/Casting	0.685	PM	2.80	8.40	8.40	none
SCC# 3-04-003-18		PM-10	2.80	8.40	8.40	none
16x20 line		SO2	0.02	0.06	0.06	
		NOx	0.01	0.03	0.03	
		VOC	0.00	0.00	0.00	
		CO	---	0.00	0.00	
		Lead	---	0.00	0.00	

Process:	Rate (tons Al/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control (% eff.)
Castings Cooling	0.685	PM	1.40	4.20	4.20	none
SCC# 3-04-003-25		PM-10	1.40	4.20	4.20	none
16x20 line		SO2	0.00	0.00	0.00	
		NOx	0.00	0.00	0.00	
		VOC	0.00	0.00	0.00	
		CO	---	0.00	0.00	
		Lead	---	0.00	0.00	

Process:	Rate (tons Al/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control (% eff.)
Castings Shakeout	0.685	PM	3.20	9.60	1.82	wet 81.0%
(Tunnel, Accumulator)		PM-10	2.24	6.72	1.28	scrubber C 81.0%
SCC# 3-04-003-31		SO2	0.00	0.00	0.00	
AP-42 Ch. 12.10		NOx	0.00	0.00	0.00	
Aisco drum		VOC		0.00	0.00	
		CO	---	0.00	0.00	
		Lead	---	0.00	0.00	

Process	Rate (ton sand/hr)	Pollutant	Ef (lb/ton sand)	Ebc (ton/yr)	Eac (ton/yr)	Type of control
Sand Handling	20	PM	0.65	56.9	6.2	wet 89.10%
EPA SCC# 3-04-003-50		PM-10	0.54	47.3	5.2	scrubber C 89.10%

## Methodology:

Ef = Emission factor

Ebc = Potential Emissions before controls = Rate (units/hr) x Ef(lbs/unit) x 8760 hrs/yr / 2000 lbs/hr

Eac = Potential Emissions after controls = (1-efficiency/100) x Ebc

1 lb = 2000 tons